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ABSTRACT

This report describes the use of a research-oriented databank on international treaties in undergraduate courses in international law. Following a discussion of the study of treaties, their magnitude, and the political significance of their magnitude, the use of treaties by lawyers and political scientists is contrasted with their value to teachers and students; the development by the University of Washington of a computerized database covering approximately 5,000 treaties is summarized; and examples are provided of the use of treaty databank information to examine the structure of the international system and its temporal dynamics. In addition, a summary of methods used to incorporate treaty data in undergraduate international law courses includes using quantitative treaty data as a lecture aid, conducting simulated treaty-drafting conferences, and providing direct student access to the treaty databank via mainframe and microcomputer interaction. Finally, full-text storage and retrieval and access to English-language versions of foreign-language texts are considered as future possibilities for the databank. (KM)

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# TREATIES, COMPUTERS, AND UNDERGRADUATES

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## INTRODUCTION

The last panelist on the last day of a 4–day conference has one obligation that overrides all others –– he must be brief.

And there is one thing he must avoid like the plague –– repeating truisms that have become common coin for the conference.

I shall observe these two conditions.

## B. TREATIES

The title of my paper, TREATIES, COMPUTERS, AND UNDERGRADUATES, has two parts that are familiar to all of us here (COMPUTERS and UNDERGRADUATES), but not much is known about TREATIES outside a small group of specialists. Therefore, I should start with some basic questions, like: Why study treaties? What are the basic facts –– magnitudes, distribution, trends? Then, with this information at hand, we can look at the links between treaties, computers, and undergraduates.

1. WHY STUDY TREATIES? Lawyers look at treaties as the main source of international law in the world today. Together with customary law, treaties have been one of the two main sources throughout recorded history. One of our colleagues at this Conference, David Owen of Cornell, mentioned Sumerian treaties of the 26th century B.C.. But David is not a lawyer. Neither am I. Why are we interested in treaties? His Sumerian treaties help him reconstruct an image of time and place. For me, as a political scientist, treaties help me understand and describe contemporary world politics. treaties mirror political reality. What's more, they are a convex mirror. They shrink reality to manageable size but leave the proportions intact. True, any one treaty may be broken, but treaties as a class describe world affairs in a way that maximizes important things and minimizes trivia.

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2. MAGNITUDES. About 50,000 treaties have been concluded in human history, about 90% of them in the 20th century. From ancient times through the 19th century nearly 100% of the treaties were bilateral (two parties). In the 20th century, there is a growing trend to multilateralize treaties, and to institutionalize them (regional and global treaties, and institutions like the European Community and the United Nations). Even so, bilateralism still dominates the world's treaties today, at the rate of 10:1.

3. POLITICAL SIGNIFICANCE OF THESE MAGNITUDES. Let me give you an example, an analogy. Suppose US federal law were like international law. If so, 90% of federal law would be made by pairs of States, only between themselves. There are about 1,200 pairs of States. If each pair has only one mutual treaty, that's 1,200 treaties, but the states need more, many more. Then there would be a few hundred multilateral treaties for any number of States greater than two up to 50. Very few of them would be signed by all 50 States and, even if signed, some of them wouldn't be ratified by all the States which signed. And even if ratified, some of them would make reservations, or put on time limits, or make federal enforcement contingent on gubernatorial consent. Wait. It gets worse. Only States would have access to the Supreme Court, and even then the Supreme Court would have jurisdiction only if both parties agreed. Finally, there would be no President to enforce what little law there is. What a "state of the union" this would be! And, mind you, this is the state of the world. That's why treaties are so important, not because they are so good, but because they are just about the only law and order we have in world affairs.

4. TREATIES -- TOOLS OR DATA? It depends on the user, lawyer or teacher:

a. LAWYERS. Private lawyers look for a treaty to fit the case at hand. For example, suppose a client gets part of his income from a business he owns in Canada and asks his lawyer how to handle tax payments (to both governments, either, which, in what proportion?). His lawyer will look for the latest US-Canadian tax treaty and will probably find the answer there or in subsequent treaty-related court cases. Another use of treaties as tools is in the work of government lawyers. They look for a treaty to see how it may affect a decision in foreign policy. During the Cuban Missile Crisis, for instance, the legal advisor to the State Department checked where the Soviet Union had treaty-based refueling rights for military aircraft on their way to Cuba. Both

examples are important to lawyers but have little or no educational value for undergraduates or their teachers.

b. TEACHERS. Now let's look at treaties in a different way. We can see treaties as signs and symbols of relations between countries, not the ups and downs of daily events, but the large patterns, the long-range trends, the "big-picture." Now we ask different questions, more relevant to the teaching of undergraduates. Suppose all knowledge of diplomatic history were lost except for a complete record of treaties. Could we reconstruct a fair image of world affairs? Might we even see some aspects in a new light, or might this view of world affairs draw attention to things otherwise hard to see or easy to overlook? Might such an image be like an x-ray view of a human being, different though recognizable, and useful for certain purposes?

5. TREATIES -- WHERE ARE THE DATA? Information about treaties doesn't come in a format that allows us to answer these questions, or it didn't come this way until recently. That's why the questions had not even been asked prior to the computer age, just like the flight time from New York to London didn't interest people until after the airplane had been invented. The "airplane" we needed for macro studies of treaties was the computer, and in turn the computer imposed its own logic and procedure on the questions. The first step was to standardize and to quantify the information. In short, we had to transform treaties into data.

## C. COMPUTERIZATION

1. HISTORY OF TREATY PROJECT. The story of how we computerized treaty information has been told many times in print, in various contexts. (AMER. SOCIETY OF INT'L LAW, 1965 PROCEEDINGS, pp.93-98; INT'L STUDIES QUARTERLY, 1968, pp. 174-195; WORLD TREATY INDEX. 1974, Volume 1, Introduction; TREATY PROFILES, 1976, pp.4-10; WORLD TREATY INDEX, 1984, Volume 1, pp. 7-39). The gist of it is simple. Until the early 1960s the field did not exist. It began at the University of Washington as an incidental and haphazard by-product of an undergraduate team project in an international law class, a perfect example of serendipity (for others see Shively, THE RESEARCH PROCESS IN POLITICAL SCIENCE, 1984, pp. 42-45 and passim). Soon there was the first set of treaty data -- worldwide in scope, standardized in format, computerized, and ready for use. It covered approximately 5,000 treaties and about a half a dozen key features for each treaty (parties, topic, date of

signature, length, textual reference to international institutions, and codes for identification and citation).

**FINDINGS**

1. STRUCTURE OF THE INTERNATIONAL SYSTEM. The "x-ray view" of world affairs shows many familiar patterns. Beyond confirming the familiar, it makes vague commonsense notions more precise and it draws attention to comparisons and rankings that would otherwise remain obscure or at lower levels of awareness on the part of the observer. (Samples of national and regional "treaty profiles" were shown to the audience via overhead projector at this point, and typical patterns were highlighted). A typical "Satellite" has an abnormally large percentage of its treaties with its hegemonical State and with its geopolitical group of States, e.g., Mongolia (23% with the USSR, 85% with the Communist Group), or El Salvador (30% with USA, 19% with Latin America, zero with the Communist Group). Similarly, ingroup/outgroup ratios are significant. Regions rank as follows (ingroup treaties as percent of total treaties):

| | |
|---|---|
| Communist Group | 58% |
| Western Europe | 40% |
| Latin America | 32% |
| Asian Group | 21% |
| Arab Group | 9% |
| Commonwealth | 8% |
| Africa | 5% |

This may not be enough to indict the Soviet Union as the "Evil Empire" but it does show that the international behavior of Communist-governed States is much more ingroup-centered than that of any other group of States. Indeed, the difference increases further if we express the ingroup bias in relative terms (per number of States in group) because the Communist Group has fewer States than most of the others. The same set of figures also shows the dependency of the Third World on outgroup contacts. Here, too, the low percentages could be further dramatized if we expressed them relative to the (very large) numbers of States in Third World groups.

2. TEMPORAL DYNAMICS. The system has not only static properties but it also changes over time. For instance, Cuba moved in the 1960s from the USA/Latin American context to that of the Communist Group; Yugoslavia

moved in the late 1940s and 1950s from the Communist Group to a delicate East–West balance. The moves are clearly visible in the treaty profiles. Even subtler points emerge when we look at South Vietnam's treaty profile. The switch in client relation from France to USA (1950s/1960s) may not surprise many but how many would have expected the corresponding change in the proportion of aid treaties in total treaties between France/USA and Vietnam? Vietnam got more than 8 times as many aid treaties out of USA compared to what it got out of France. In fact, France isn't even in second place. Japan is. A delayed echo of Japan's "Co–prosperity Sphere" of World War II? What a window this is from which to survey the horizon of relative costs of losing wars!

3. FULL VARIETY/LIMITED EXAMPLES. I gave just a few examples for a nearly unlimited variety of quantified treaty data. The latest published profiles cover 621 pages of tabulations, a typical page having 12 columns and 40 rows, yielding a total of about 300,000 matrix cells of information. Neither are these raw data out of a number cruncher. They are the result of literally years of testing, sifting, sorting, re–formatting, revising, agonizing, and finally reducing the volume in response to pressure from the publisher so that only the most significant data survived into the final printed version. More questions can be asked by interacting directly with the databank. The number of possible combinations of data is truly mind–boggling in view of 150 States having 50,000 treaties with 80 topics and 200,000 keywords in treaty tiles, ranging over 80 years and having many additional pieces of information for each treaty and many ways of aggregating data in subsets (groups of countries, blocks of years, clusters of topics).

## E. UNDERGRADUATES

1. TEACHING OR RESEARCH? This is a false question. The answer is: Both, emphatically both, as revealed in the title of my first report to the American Society of International Law ("A Case of Combining Teaching and Research," 1965 PROCEEDINGS, p.93). The databank was created in response to a classroom question. Then it grew into a unique research facility for the specialists worldwide, but it also remained and still is part of the undergraduate scene where it started.

2. METHODS. The methods have changed, though. Each new class in international law has been exposed to the databank in some form.

a. LECTURES. In the early years (1960s), I used quantitative treaty data mostly as lecture aids, as in this presentation, by means of overhead projectors with verbal explanations and discussions.

b. SIMULATED CONFERENCE. Later, in the 1970s, students were able to do individual projects with the WORLD TREATY INDEX and with TREATY PROFILES. Ever since the late 1970s, my international law class has spent the last two weeks of class simulating a treaty-drafting conference. Each student chooses one country, writes a background paper on the country's treaty pattern and probable stance in treaty-related negotiations, and then represents that country as "legal adviser" at the conference. (For a description in print, see AMER. SOCIETY OF INT'L LAW, 1984 PROCEEDINGS, Panel on Int'l Law Teaching). A major source of information is an individual computer printout for geopolitical group content with global comparisons and time trends and topical breakdowns.

c. MAINFRAME INTERACTION. In the early 1980s we began to allow undergraduates direct access to the databank via terminal, and in the mid-1980's, with growing numbers of PCs owned by students, we let students interact with the campus mainframe via modem from their own PCs at home. This method came to an untimely end in 1985 when the University dropped our data management system (System 2K) from its mainframe repertoire. There had also been other practical problems with machine time, budget allotments, student priorities, physical workspace, and other difficulties.

d. MICRO INTERACTION. The mainframe problems were solved in a radical innovation in 1986, thanks to an IBM Olympus grant. We now have an IBM PC/AT at the Treaty Research Center, and we are moving an easily manageable subset of the databank from the mainframe to the AT. Undergraduates can do their treaty homework in a user-friendly, menu-driven environment. The new system is now in its final testing on a 10% sample of the database (appx. 5,000 treaties) and has already been used not only in-house by Treaty Center staff, but also by a few undergraduates, some with and some without prior computer experience. The system is available for demonstration downstairs.

## F. FUTURE PLANS

1. UNDERGRADUATES. As in the past, most helpful are the "naive" questions of undergraduates. Unaware of the difficulties and costs, they ask

"why not?" questions which in some cases lead to "let's try" answers and eventually to new features of the databank.

2. TEXTUAL STORAGE AND RETRIEVAL. Now, for instance, undergraduates (and professionals) want to get selected treaties or parts of treaties in full text on the screen. The obvious models are LEXIS and WESTLAW, two full text storage and retrieval systems for U.S. court cases that have come into widespread commercial use in recent years. (See LEGAL REFERENCE SERVICES QUARTERLY, 1984, articles by Burson, p. 3, and by Coco, p.27). Of course, treaties are not as easily available and not as easy to machine-process as domestic court cases, but the technology is available and the cost has come down to arguable size.

3. TEXT OF TREATIES. Our databank has now 50,000 treaties, of which about 25,000 are available in a standard font in English, totaling about one billion characters of text. The other 25,000 treaties come in various fonts and languages, and in varying difficulty of access, totaling another billion characters. The first billion can be made machine-readable via optical scanner, but it also needs a front-end reference system and customized software for storage and retrieval. The second billion will be much harder to find, to translate, and to make machine-readable, but it will not require additional software. Annual increments are about 20 million characters, again with varying problems of access, language, and machine-ability. This isn't easy but neither are the other full-text databanks that are reported in these PROCEEDINGS, see Abercrombie of Pennsylvania, Cohen of Princeton, Kahn and Landau of Brown and Owen of Cornell.

4. NOVEL QUESTIONS. Perhaps the most challenging problem has nothing to do with law and treaties in particular but with giant text memory systems in general. This is where the technology of the information age catches us all unprepared. Suppose we had every word in a major library right now available in machine-readable form, and suppose we had the hardware and software to retrieve any word in any context at any time. How would we use it? What would we do that we are not doing now? Are we ready for brain-extending tools of such awesome power? Can undergraduates help us, once again, by asking "naive" questions?